

REMARKS

Status of the Claims

Claim 2 is currently amended to incorporate the subject matter of claims 24 – 28. Claim 18 is currently amended to incorporate the subject matter of claims 30 – 31. New claim 32 has been added and is supported at paragraphs [0037] and [0045]. New claims 33 – 43 have also been added and are supported by the combination of claims 1 and 18 and claims dependent thereon. Claims 3, 5 – 17, 19 – 21, 23 and 29 are unchanged from Applicant's last amendment, and claims 1, 4, 22, 24 – 28 and 30 – 31 are cancelled without prejudice or disclaimer. Applicant respectfully submits that no new matter has been added by virtue of this amendment.

Rejection Under 35 U.S.C. § 103

The Examiner rejects claims 2-3, 5-6, 8, 14-18, 20, 24-28 and 30-31 under 35 U.S.C. § 103(a) alleging that the claims are unpatentable over Redmer et al. (US2004/0037444; "Redmer") and Huang (US2003/0103637; "Huang"). Applicant respectfully disagrees and submits that previous claim 2 and the claims dependent thereon are not obvious in view of this combination of references. However, in an effort to advance the prosecution of this application, Applicant has amended claim 2 to incorporate the subject matter of claims 24-28 and submits all claims as amended as well as new claims 32-43 are patentable over the combination of Redmer and Huang.

Claim 2 now recites that the first and second speakers are positioned between the first and second outlets on either side of and a distance from the centerline of an acoustic path formed by the first and second tubes such that a tube length between the first speaker and the first outlet is less than a tube length between the first speaker and the second outlet, and a tube length between the second speaker and the second outlet is less than a tube length between the second speaker and the first outlet, and further wherein the tube length between the first speaker and the first outlet is substantially the same as a tube length between the second speaker and the second outlet, and the tube length between the second speaker and the second outlet is substantially the same as a tube length between the first speaker and the first outlet. These features of the position generating speakers are also incorporated into new independent claim 33.

Applicant submits that Redmer only describes the use of one speaker and does not incorporate any description as to how a set of two or more speakers can be integrated into a

headset in a way that provides a sound positioning functionality. This is evident from paragraph [0028] of Redmer, which states that the “speaker housing 40 is centrally mounted between the legs 20 of the frame.” Mounting a single speaker at this position and using the acoustic passages of Redmer for delivering sound to the described earpieces (i.e. which “preferably include in-ear inserts”; see Redmer at paragraph [0008]) does not allow for any sound positioning whatsoever. Redmer does not seek a solution to the challenges of providing a headset with sound positioning features.

The Examiner at least acknowledges that Redmer fails to describe the use of multiple speakers and has therefore combined this reference with the teachings of Huang. However, Huang only describes a headset with multiple speakers positioned within the two earpieces. While some front to back directionality effects may possibly be obtained using this design, any significant timing differences (especially left-right differences) that would be experienced by the user would have to be electronically reproduced using Huang’s device. This is particularly difficult to achieve since simulation of a path delay is confounded by differences between users – e.g. in how the user’s head and ears are sized and shaped and the ways that the brain processes sound. The headset of the present claims does not require electronic simulation of path delay. This is achieved through the use of multiple speakers positioned offset to each other from the centerline of the acoustic path(s) created by the tubes defined in the claims. Applicant’s previous remarks describe path delay in detail and are not reproduced here to avoid duplication. This offset positioning recited in Applicant’s claims are not taught or suggested in either of the cited references.

Thus, Redmer only describes a single speaker, and Huang only describes the use of speakers within the earpieces of a headset. Neither suggests positioning multiple speakers offset to each other from the centerline of an acoustic path created by tubes joining the earpieces of a headset. Applicant submits that this is not an obvious feature, since it provides an improved functionality that cannot be obtained by either of Redmer or Huang, alone or combined. Thus, it is firmly believed that the combined teachings of Redmer and Huang do not render claims 2-3, 5-6, 8, 14-18, 20, 24-28 and 30-31 obvious.

With regard to the remaining dependent claims, the Examiner further alleges that claims 23 and 29 are unpatentable over Redmer and Huang together with Yuugo (JP 57-041095), claims 7 and 9-11 are unpatentable over Redmer and Huang together with Meucci Jr. (U.S. Patent No.

6,038,330), claims 12-13 and 21 are unpatentable over Redmer and Huang together with Yamagishi (U.S. Patent No. 5,459,290); and claim 19 is unpatentable over Redmer and Huang together with Shen et al. (U.S. Patent Publication No. 2002/0181727). However, none of these references teaches or suggests a way to achieve improved sound positioning in a headset design; especially by positioning multiple speakers offset to each other from the centerline of an acoustic path created by tubes joining the headset earpieces.

Applicant submits that the invention as set forth in the presently amended claims would not be considered to be obvious or unpatentable in view of the cited references by one of ordinary skill in the art at the time of the invention. Thus, Applicant respectfully submits that the present claims overcome the rejection under 35 U.S.C. § 103(a) and requests that the Examiner's rejections be removed.

In Conclusion

In view of the foregoing, it is respectfully urged that the present claims are in condition for allowance and reconsideration is requested. An early notice to this effect is earnestly solicited. Should there be any questions regarding this application, the Examiner is invited to contact the undersigned at the number shown below. If the Examiner believes that issues may be resolved by a telephone interview, the Examiner is invited to telephone the undersigned. Applicant is submitting additional claim fees; however, in the event that the Office determines that additional fees are due, the Office is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 18-1215.

Respectfully submitted,



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Enclosures

Petition for Three Month Extension of Time
RCE Transmittal